

Unit 13

Day 2

Composition of Functions

$$f(x) = x^2$$

$$g(x) = 2x$$

$$g(f(-4)) = (g \circ f)(-4) = g(f(-4)) = g(16) = 2(16) = 32$$

$$f(-4) = 16$$

$$g(f(3)) = (g \circ f)(3) = g(9) = 18$$

$$f(3) = 9$$

$$g(f(x)) = g \circ f = g(x^2) = 2x^2$$

$$g(x) = 2x = 2(x^2)$$

Ex2:

$$m(x) = x^2 - 7$$

$$n(x) = \sqrt{x-3}$$

$$p(x) = x^2 + 2x$$

$$(m \circ n)(7) = m(n(7)) = m(2) = 4 - 7 = -3$$

$$n(7) = 2$$

$$(p \circ m)(3) = p(m(3)) = p(2) = 4 + 4 = 8$$

$$m(3) = 2$$

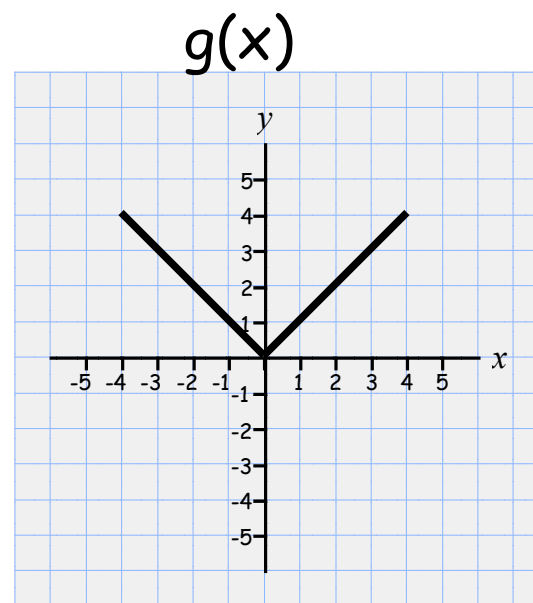
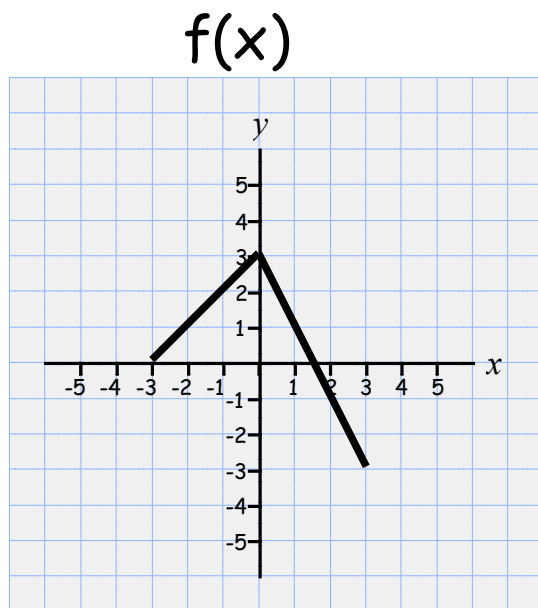
$$(m \circ m)(-1) = m(m(-1)) = m(-6) = 36 - 7 = 29$$

$$m(-1) = -6$$

$$p \circ (m \circ n)(12) = p(m(n(12))) = p(m(3)) = p(2) = 8$$

$$n(12) = 3 \quad m(3) = 9 - 7 = 2$$

Ex3:



$$f(1) + g(-1) = 1 + 1 = 2$$

$$f(0) - g(0) = 3 - 0 = 3$$

$$\frac{f(2)}{g(1)} = \frac{-1}{1} = -1$$

$$(f \circ g)(1) = f(g(1)) = f(0) = 3$$

$$(g \circ f)(2) = g(f(2)) = g(-1) = 1$$

HW pg 255-258 19-30 all, 34-48 even, 52, 54, 56, 75